

Statistics

Measures of Center

- mean - find the sum (add the numbers) and divide by the numbers in the data set

Example Find the mean:

5, 6, 8, 5, 7, 4

$$\frac{5+6+8+5+7+4}{6} = \frac{35}{6} \approx 5.8$$

$$\begin{array}{r}
 5.833\ldots \\
 6 \overline{) 35.00} \\
 \underline{30} \\
 50 \\
 \underline{48} \\
 20
 \end{array}$$

100
100
100
100
100
100
70
70
15
15
15
15
0
0

- median - the middle number in a data set

medium and median sound similar: small medium large
↑
median
middle

Median middle

- list data points in order from least to greatest
- cross out 1 low and 1 high number until you reach the middle
- If there are 2 middle numbers, find the mean of those 2

Example 6, 8, 7, 5, 4

~~4, 5~~, 6, ~~7, 8~~

Median: 6

Example 2 5, 6, 8, 5, 7, 4

~~4, 5~~, 5, 6, ~~7, 8~~

Median: 5.5

Measures of frequency

how often something happens

mode: most common number

Example 1:

5, 6, 8, 5, 7, 4

4, (5, 5), 6, 7, 8

mode: 5

Example 2

4, (5, 5), 6, 7, (8, 8)

(bimodal)

mode: 5, 8

Example 3

4, 5, 6, 7, 8

mode: no mode

Example 4

4, 4, 5, 5, 6, 6, 7, 7, 8, 8

mode: no mode

Range

the difference between the lowest and highest numbers in the data set

(span)

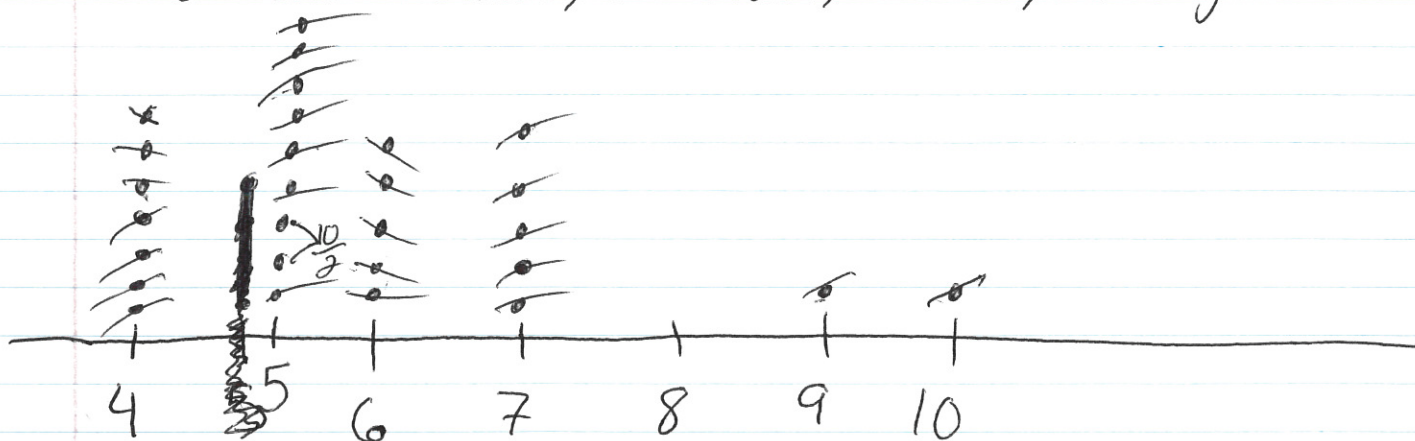
Example | 5, 6, 8, 5, 7, 4

Range: $8 - 4 = 4$ range

How many letters are in your first name?
Set of data

$\{9, 7, 6, 6, 4, 4, 4, 4, 7, 5, 4, 5, 6, 5, 5, 6, 10, 6, 5, 5, 5, 7, 5, 5, 7, 4, 7, 4\}$

Find the mean, median, mode, range



Letters in first name

mode: 5

median: 5

Range: $10 - 4 = 6$

mean: 5.6

$$\frac{7(4) + 9(5) + 5(6) + 5(7) + 9 + 10}{28} = \frac{157}{28} = 5.6$$

$$28 \times 1 = 28$$

$$28 \times 2 = 56$$

$$28 \times 3 = 84$$

$$28 \times 4 = 112$$

$$28 \times 5 = 140$$

$$28 \times 6 = 168$$

$$\begin{array}{r} 5.60 \\ 28 \overline{)157.00} \\ \underline{740} \\ 170 \\ \underline{168} \\ 20 \end{array}$$

$$\begin{array}{r} 2 \\ 28 \\ 45 \\ 30 \\ 35 \\ + 9 \\ 10 \\ \hline 157 \end{array}$$